



The NovitaTech Snowy Hydro Telecommunications Road Show

Promoting Accessible Communication

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NovitaTech, a division of Novita Children's Services

Session 1:

- An overview of the Masters & DoCITA research
- Readily available (off-the-shelf) phones that have significant features for people with a disability



Masters & The *Department of Communications, Information Technology and the Arts* (DoCITA) Research

<http://www.dcita.gov.au/>



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Masters & DoCITA Research

Background research:

- *Strategic Partnership with Industry, Research and Training (SPIRT)* grant from the *Australian Research Council (ARC)* for a Masters of Engineering thesis:
 - “Accessible Mobile Communication for People with Disabilities”
- Focus group discussion
- “Home and Mobile Phone Needs Analysis Survey Questionnaire”



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Telecommunications trial

Research cont'd

- Masters Thesis objective:
 - Review of the literature and other available information on the telecommunications industry, technologies, services and current solutions suitable for people with disabilities.
- FG & Survey Questionnaire objective:
 - Identify difficulties or barriers faced by people with disabilities and their needs with accessing home and mobile phones.



Research cont'd

FG & Survey Questionnaire outcomes:

- Showed that people with disabilities within the community are able to use, and **want** to have access to, mobile phone technology.
- A “*technology gap*” exists
 - Apart from general difficulties in performing *essential* tasks on current phones, most people with a disability are **not aware** of the available technology, and if they are, **do not use it to the fullest extent.**



Research cont'd

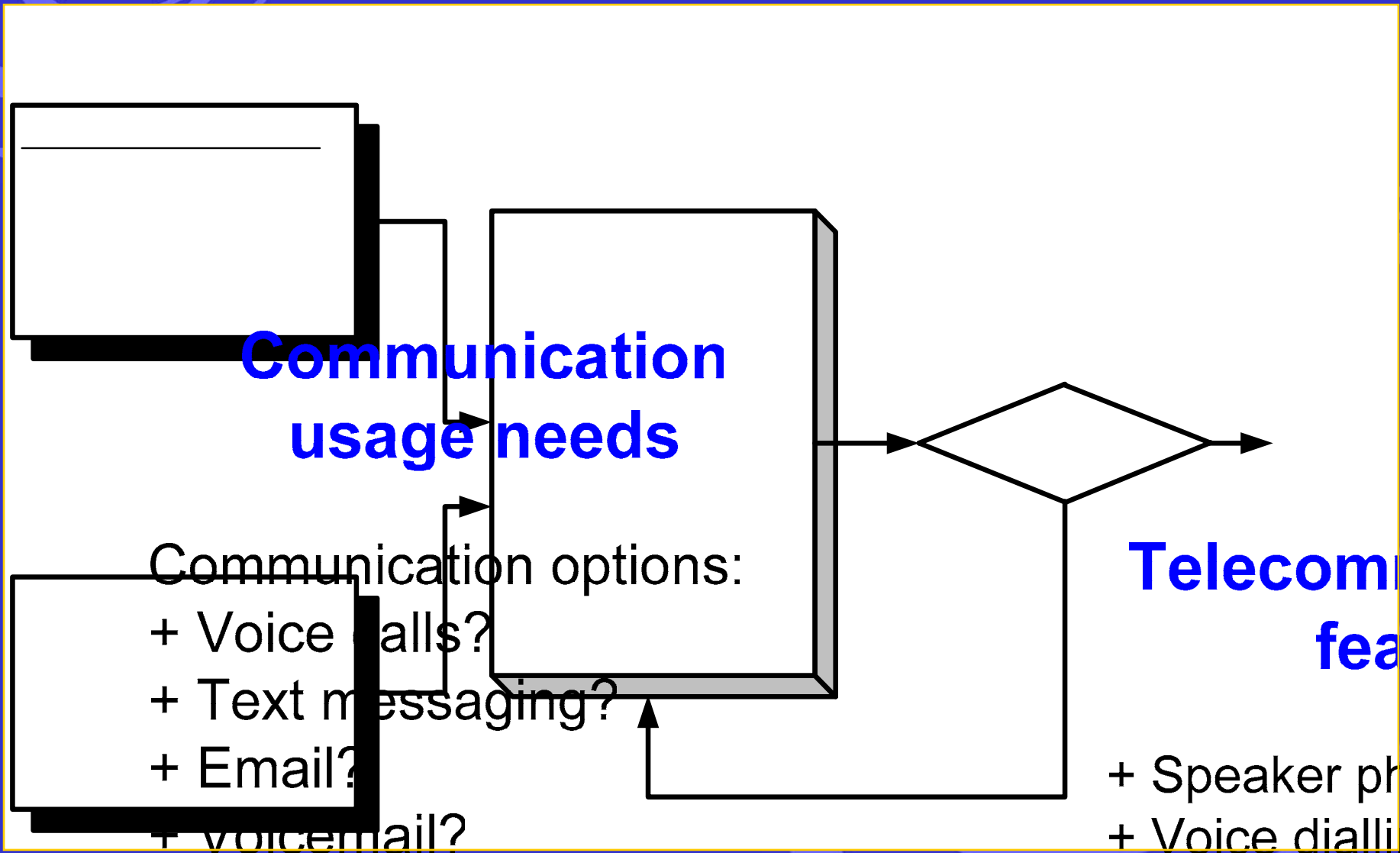
- **Physical problems include:**
 - Reduced strength
 - Limited mobility
 - Limited dexterity
 - Lack of critical eye-hand coordination and timing
- **Unable to:**
 - ❖ Dial a number
 - ❖ Answer a call in time
 - ❖ Hold the phone
 - ❖ Lift (maintain & stabilise) the phone
 - ❖ Create text messages on keypad due to small buttons

Research cont'd

- Led to the application and successful DoCITA grant.
- Aim:
 - To trial and evaluate new configurable 'off-the-shelf' technological options that can improve the lifestyle, independence, security and social interaction of people with physical disabilities.



Matching Participants to Available Technology



Participants	Age	Diagnosis	Previous Telecommunications Exposure
1	17	Cerebral Palsy (CP), limited mobility	Nokia 5110
2	80	Polio, restricted to wheelchair, hearing aid user	Yes
3	18	Muscular Dystrophy (Duchenne's)	Panasonic GD 75
4	53	CP – mild	Ericsson A2618
5	23	Limited mobility & reduced strength	None
6	39	Restricted & limited mobility	None
7	18	Muscular Dystrophy	Motorola Talkabout
8	14	CP (intellectual)	Philips Savvy
9	16	Athetoid CP	None
10	50	CP – severe	Nokia 3310

Research cont'd

Group 1:

- Participants with **mild** physical disabilities that prevent them from using a standard mobile phone. Typical problems were associated with small keys and displays and difficulties related to lifting or holding the phone for the duration of the call. (*3 participants*)

Group 2:

- Participants with **moderate** physical disabilities that typically restrict them to the use of one mode of communication such, as text or voice, or limited use of both. (*4 participants*)

Group 3:

- These participants have **severe** physical disabilities. Non-independent use of conventional telecommunications equipment (*3 participants*)



“ABA” Approach

A – Before measure: without equipment

B – During measure: with equipment (3 weeks)

A – After measure: when equipment had been withdrawn for 2 weeks or more.

(NB: At each stage, a face to face interview was carried out to collect the perception of participants.)



Assessment Using COPM

- *Canadian Occupational Performance Measure*
- An outcome measure tool designed to detect change in a client's self-perception of occupational performance over time.
 - *Identify up to 5 problems;*
 - *Rate importance;*
 - *Evaluation of performance and satisfaction relative to problem areas;*
 - *Reassessment – change of perception.*
 - Importance scores:
1 = not important at all 10 = extremely important
 - Performance scores:
1 = not able to do at all, 10 = able to do it extremely well
 - Satisfaction scores
1 = not satisfied at all, 10 = extremely satisfied



Participant 5 (Group 2) – Bluetooth Car Kit System



Age: 23

Problem(s):

- Limited mobility & reduced strength

Client's needs:

- Voice dialling¹
- Speed dialling¹
- Speakerphone¹
- Voicemail/answering machine²

Occupational problem(s):

- For emergency & security

¹ – Essential

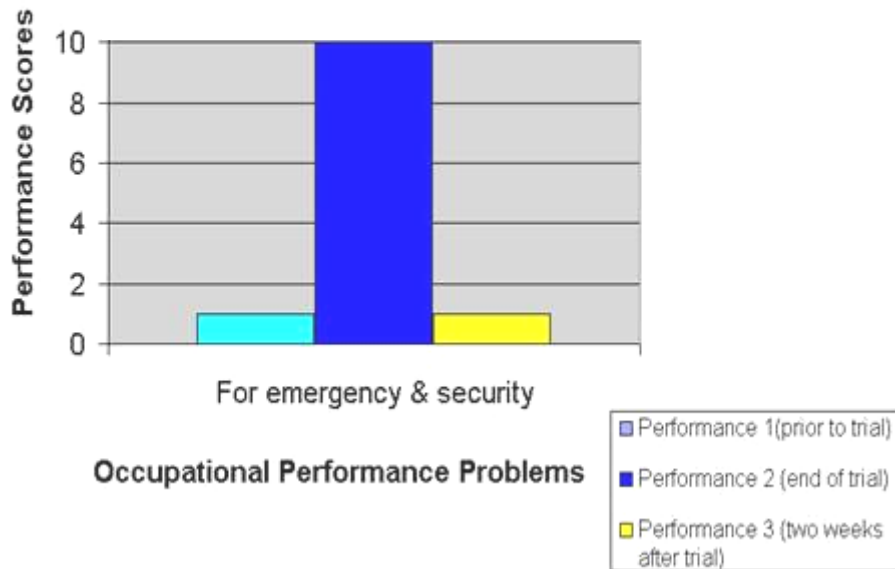
² – Important



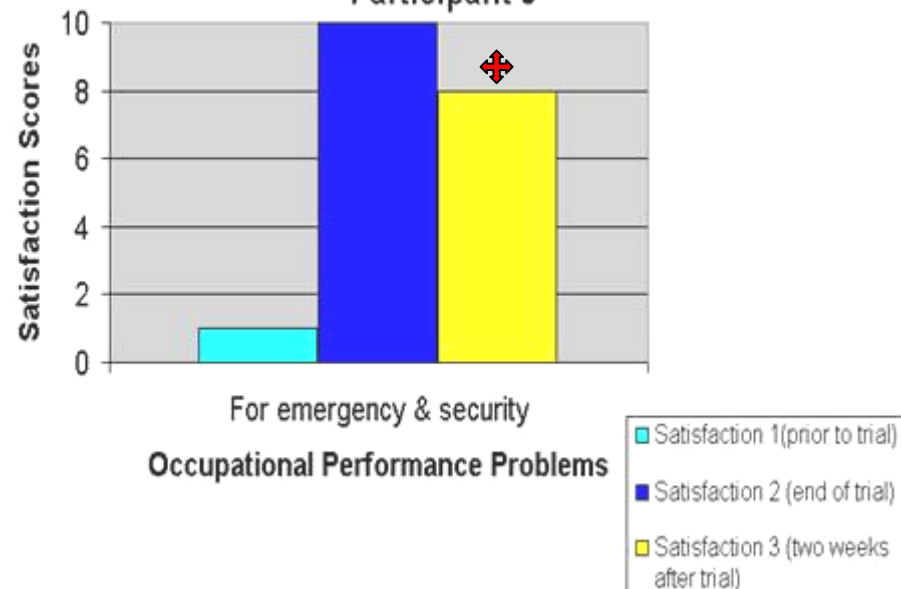
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Results

Occupational Performance Measure for Participant 5



Occupational Satisfaction Measure for Participant 5



Research cont'd



Grp1: A client using a speaker phone



Grp 2: A client using a speaker phone



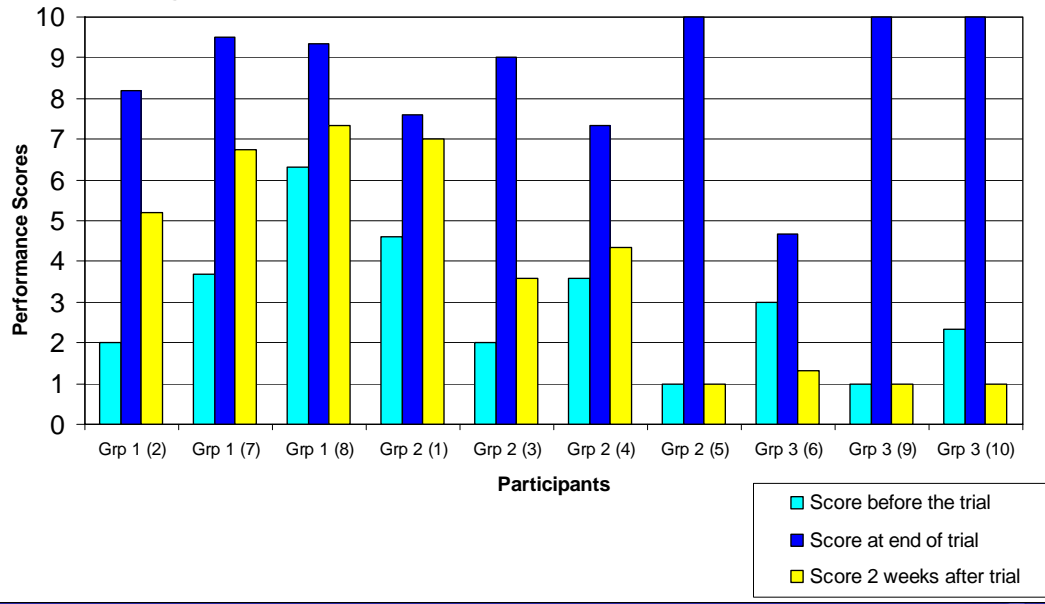
Grp 2: A client using a PDA + phone



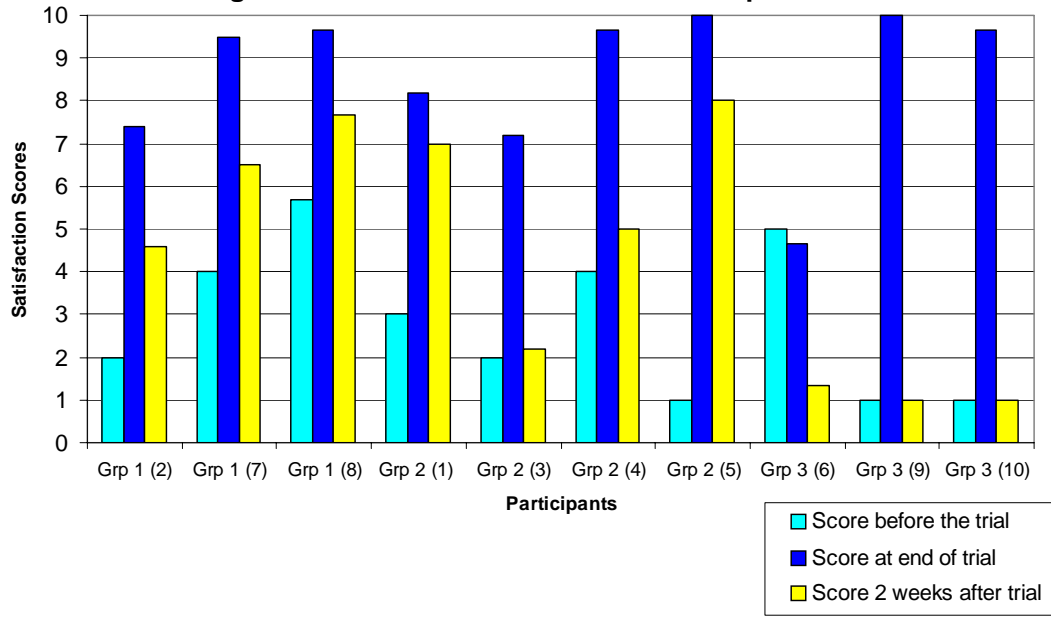
Grp 3: A client with an Infrared phone



Average Performances Scores for each Participant in the Trial



Average Satisfaction Scores for each Participant in the Trial



Research Outcomes

- 9 out of 10 participants showed *high* to *very high* outcomes for performance and satisfaction.
- Solutions available for the 3 defined groups, especially Group 3.
- Results were supportive of the aim.
- Education improved each participant's accessibility.
- 4 out of 10 participants have bought the trialed or similar technology.



Summary

- Key factors for success:
 - Communication: Understanding the person's telecommunication needs.
 - Knowledge of features currently available on telecommunications equipment.
 - Time: About a total of 4 hrs with the person.
 - For more information download report at:
<http://www.novitatech.org.au/library/NewTelecomOpShortReport.pdf>





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NovitaTech gratefully acknowledges the support it has received for this Road Show:



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